

Amendments To The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-19 (Canceled)

20. (Currently Amended) A method of modeling effects of genes on a mammalian dystrophic condition by:

(a) obtaining A fish model of mammalian muscular dystrophy or cardiomyopathy comprising an isolated zebrafish genetic strain having a mutant phenotype resulting from a mutation within the zebrafish dystrophin gene; and

(b) comparing effects of the mutant phenotype with a phenotype of the mammalian dystrophic condition according to claim 16 or progeny, fry, or gametes thereof.

21. (Currently Amended) The method fish model according to claim 20 wherein the mammalian muscular dystrophy dystrophic condition is human muscular dystrophy.

22. (Withdrawn) A method for screening agents having potential activity on muscular dystrophy or cardiomyopathy comprising:

(a) providing a fish model of mammalian muscular dystrophy or cardiomyopathy according to claim 20;

(b) exposing the zebrafish to an agent; and

(c) determining any effect of the agent on a genetic or physical characteristic of the zebrafish or its progeny.

23. (Withdrawn) The method according to claim 22 wherein the mammalian muscular dystrophy is human muscular dystrophy.

24. (Withdrawn) The method according to claim 22 wherein the agent is a drug candidate, chemical, compound, nucleic acid, or mixture thereof.

25. (Withdrawn) The method according to claim 22 wherein the fish is exposed to the agent by addition to fish raising media, or by direct administration to the fish by any suitable means.

26. (Withdrawn) The method according to claim 22 wherein the effect is determined by any visual or light microscopic technique including techniques that utilize transgenic reporter gene expression to monitor muscle integrity.

27. (Withdrawn) The method according to claim 26 wherein the effect is determined by simple optical inspection of living muscle tissue, birefringency of muscle tissue using polarized light, use of Green fluorescent protein transgenic lines driven by a muscle specific promoter, use of immunohistochemistry, use of antibodies directed against muscle specific epitopes or in situ hybridization for muscle specific gene expression.

28. (Withdrawn) The method according to claim 23 wherein the agent is a drug candidate, chemical, compound, nucleic acid, or mixture thereof.

29. (Withdrawn) The method according to claim 23 wherein the fish is exposed to the agent by addition to fish raising media, or by direct administration to the fish by any suitable means.

30. (Withdrawn) The method according to claim 23 wherein the effect is determined by any visual or light microscopic technique including techniques that utilize transgenic reporter gene expression to monitor muscle integrity.

31. (Withdrawn) The method according to claim 30 wherein the effect is determined by simple optical inspection of living muscle tissue, birefringency of muscle tissue using polarized light, use of Green fluorescent protein transgenic lines driven by muscle specific promoter(s), use of immunohistochemistry, use of antibodies directed against muscle specific epitopes or in situ hybridization for muscle specific gene expression.

32. (Withdrawn) A method for monitoring or testing the effect of an agent having activity on muscular dystrophy or cardiomyopathy comprising:

- (a) providing a fish model of mammalian muscular dystrophy or cardiomyopathy according to claim 22;
- (b) exposing the zebrafish to the agent; and
- (c) monitoring the effect of the agent on a genetic or physical characteristic of the zebrafish or its progeny.

33. (Withdrawn) The method according to claim 32 wherein the mammalian muscular dystrophy is human muscular dystrophy.

34. (Withdrawn) The method according to claim 32 wherein the agent is a drug candidate, chemical, compound, nucleic acid, or mixture thereof.

35. (Withdrawn) The method according to claim 32 wherein the fish is exposed to the agent by addition to fish raising media, or by direct administration to the fish by any suitable means.

36. (Withdrawn) The method according to claim 22 wherein the effect is determined by any visual or light microscopic technique including techniques that utilize transgenic reporter gene expression to monitor muscle integrity.

37. (Withdrawn) The method according to claim 32 wherein the agent is a drug candidate, chemical, compound, nucleic acid, or mixture thereof.

38. (Withdrawn) The method according to claim 33 wherein the fish is exposed to the agent by addition to fish raising media, or by direct administration to the fish by any suitable means.

39. (Withdrawn) The method according to claim 33 wherein the effect is determined by any visual or light microscopic technique including techniques that utilize transgenic reporter gene expression to monitor muscle integrity.

40. (New) The method according to claim 20 wherein the zebrafish exhibits muscle degeneration representative of human Duchenne or Becker muscular dystrophies.

41. (New) The method according to claim 20 wherein the zebrafish comprises progeny, fry, or gametes thereof.

42. (New) The method according to claim 20 wherein the zebrafish dystrophin gene has a sapje (sap) mutation.

43. The method of claim 42 wherein the sapje (sap) mutation is selected from the group consisting of sapje tm90c, tj7, ta222a, and combinations thereof.

44. (New) The method according to claim 43 wherein the mutation is the sapje tm90c mutation.